

EVALPM8803-FLY Bill of material

[Table 1](#) shows the bill of material for the PoE+ section based on the PM8803 configured in flyback topology with synchronous rectification using a gatedriver transformer.

With minimal BOM changes it is possible to switch from 3.3 V to 5 V output voltage.

Table 1. EVALPM8803-FLY BOM

3.3 V	5 V	Reference	Description	Value	Tol.	Voltage	Body	Vendor
1	1	EVALPM8803 FLY rev1	Board PCB					
8	8	C1,C2,C3,C4,C11C36, C44,C45	Ceramic capacitor	100 nF		50 V	603	Std
5	5	C5,C6,C7,C8,C30	Ceramic capacitor	10 nF	10%	100 V	603	TDK
NM	NM	C9,C22	Ceramic capacitor	NM			1812	NM
6	6	C10,C39,C41,C48C53, C59	Ceramic capacitor	1 μ F	20%	16 V	603	Std
1	1	C12	Ceramic capacitor	2.2 nF		2 kV	1812	TDK
NM	NM	C13,C20	Ceramic capacitor	NM		100 V	603	NM
3	3	C14,C16,C21	Ceramic capacitor	1 nF	10%	100 V	603	TDK
NM	NM	C15,C17,C24,C60	Ceramic capacitor	NM		100 V	805	NM
2	2	C18,C32	Ceramic capacitor	0.1 μ F	10%	100 V	805	TDK
2	2	C19,C38	Ceramic capacitor	22 nF		50 V	603	Std
NM	NM	C42,C46,C57,C66C69	Ceramic capacitor	NM			603	NM
1	1	C26	Aluminium capacitor	33 μ F	20%	100 V	10x10.2	Std
6	6	C27,C33,C35,C37C67, C68	Ceramic capacitor	10 μ F	20%	6.3 V	805	Std
2	2	C28,C29	Ceramic capacitor	1 μ F	20%	100 V	1206	TDK
1	1	C31	Ceramic capacitor	1 nF	10%	100 V	805	Std
1	1	C34	Aluminium capacitor	330 μ F		6.3 V	8x10.5	Suncon

Table 1. EVALPM8803-FLY BOM (continued)

3.3 V	5 V	Reference	Description	Value	Tol.	Voltage	Body	Vendor
NM	NM	C40	Ceramic capacitor	NM			805	NM
NM	NM	C43	Aluminium capacitor	NM			4x6	NM
NM	NM	C47	Ceramic capacitor	NM			603	NM
1	1	C49	Ceramic capacitor	10 nF		50 V	603	Std
1	1	C50	Ceramic capacitor	100 nF		50 V	603	Std
NM	NM	C51	Ceramic capacitor	NM			1206	NM option AC
1	1	C54	Ceramic capacitor	470 pF		50 V	603	Std
1	1	C55	Ceramic capacitor	100 pF		50 V	603	Std
1	1	C56	Ceramic capacitor	22 nF		50 V	603	Std
1	1	C61	Ceramic capacitor	2.2 nF		2 kV	1812	TDK
1	1	D1, D21	Std diode	STTH302S		200 V	SMC	STMicroelectronics
NM	NM	D2,D3,D5,D6,D15D16, D18,D19	Zener diode	(BZX84C10)			SOT23	NM
1	1	D32	Zener diode	BZX84C10			SOT23	Std
8	8	D4,D7,D8,D9,D12D13, D14, D17	Schottky diode	STPS2H100A		100 V	SMA	STMicroelectronics
NM	NM	D10	TVS diode	NM			SMA	NM
1	1	D11	TVS diode	SMAJ58A			SMA	STMicroelectronics
1	1	D20	LED diode	AUX		2.2 V	PLCC-2	Std
NM	NM	D22	Schottky diode	(STPS15L45CB)			DPAK	NM
1	1	D23	Schottky diode	STPS1H100A		100 V	SMA	STMicroelectronics
NM	NM	D24,D25	Bridge rectifier	NM			SDIP	NM
1	1	D26	LED diode	Green LED		2.2 V	PLCC-2	Std
NM	NM	D27	Zener diode	NM			SOT23	NM

Table 1. EVALPM8803-FLY BOM (continued)

3.3 V	5 V	Reference	Description	Value	Tol.	Voltage	Body	Vendor
6	6	D28,D34,D36,D37D39, D41	Schottky diode	BAT46J		100 V	SOD323	STMicroelectronics
2	2	D38, D41	Schottky diode	BAT46J		100 V	SOD323	STMicroelectronics option AC
NM	NM	D31,D35	Schottky diode	NM			SOD323	NM
NM	NM	D42	Schottky diode	NM			SMA	NM
1	1	D44	LED diode	L1 OK		2.2 V	PLCC-2	Std
2	2	JM1,JM2	Connector	Jumper 3 pins male			Pitch 2.54 mm	Std
2	2	Jumper	Jumper	Jumper 2 pins female			Pitch 2.54 mm	Std
2	2	J1,J2	Power jack	SA, SP				Std
1	1	J3	RJ45 connector	Data and power input				Std
1	1	J4	RJ45 connector	Data output				Std
1	1	J5	Terminal block 2-way	MOR-10X10.5-P5-2PIN				Std
1	1	L5	SMT inductor	10 μ H			MSS7341-103ML	Coilcraft
1	1	L6	SMT inductor	0.33 μ H			DO1813-331ML	Coilcraft
NM	NM	L7	SMT inductor					NM
NM	NM	Q1,Q2,Q3,Q4	MOSFET, P-ch	(IRF6216PbF)			SO8	NM
NM	NM	Q5,Q6,Q7,Q8	MOSFET, N-ch	(STS4NF100)			SO8	NM
1	1	Q12	MOSFET, N-ch	STS14N3LLH5		30 V	SO8	STMicroelectronics
1	1	Q14	Transistor, NPN	MMBT3904LT1		40 V	SOT23	Std
1	1	Q16	Transistor, PNP	MMBT3906LT1		40 V	SOT23	Std
1	1	Q17	MOSFET, N-ch	Si4848DY		150 V	SO8	Vishay
1	1	Q20	MOSFET, P-ch	Si2325DS		150 V	SOT23	Option AC
NM	NM	Q21	MOSFET, P-ch	IRF6216PbF		150 V	SO8	NM
4	4	R1,R2,R5,R7	Chip resistor	0			603	Std

Table 1. EVALPM8803-FLY BOM (continued)

3.3 V	5 V	Reference	Description	Value	Tol.	Voltage	Body	Vendor
NM	NM	R3,R4,R6,R8,R16	Chip resistor	NM			805	NM
4	4	R10,R11,R12,R13	Chip resistor	75 Ω			603	Std
NM	NM	R14,R125	Chip resistor	NM			1206	NM
1	1	R15	Chip resistor	0			805	Std
2	2	R17,R43	Ferrite bead	MPZ012101A		100 Ω , 4 A	805	TDK
1	1	R18	Chip resistor	100 k Ω			1206	Std
NM	NM	R19,R20,R22,R25R39, R40,R41,R42	Chip resistor	NM			603	NM
4	4	R26,R37,R49,R54	Chip resistor	0			0805	Std
2	2	R27,R58	Chip resistor	124 k Ω	1%		603	Std
NM	NM	R28,R29,R30,R31R33, R34,R35,R36R70,R71, R100, R120,R121	Chip resistor	NM			603	NM
2	2	R32,R51	Chip resistor	100 k Ω			805	Std
3	3	R38,R65,R117	Chip resistor	4.75 k Ω	1%		603	Std
3	3	R44,R52,R119	Chip resistor	1 k Ω			603	Std
2	2	R45,R99	Chip resistor	47 k Ω			603	Std
1	1	R53	Chip resistor	10 Ω			805	Std
6	6	R60,R64,R68, R84,R87,R98	Chip resistor	0			603	Std
2	2	R62,R80	Chip resistor	10 Ω			603	Std
NM	NM	R66,R81,R97	Chip resistor	NM			603	NM
2	2	R67,R106	Chip resistor	10 k Ω			603	Std
1	1	R72	Chip resistor	124 k Ω	1%		603	Std
1	1	R73	Trimmer resistor	100 k Ω				Vishay

Table 1. EVALPM8803-FLY BOM (continued)

3.3 V	5 V	Reference	Description	Value	Tol.	Voltage	Body	Vendor
2	2	R83,R107	Chip resistor	100 k Ω			603	Std
1	1	R89	Chip resistor	2.7 k Ω			603	Std
1	1	R90	Chip resistor	3.31 k Ω	1%		603	Std
1	1	R91	Chip resistor	10 Ω			603	Std
1	1	R92	Chip resistor	22 Ω			603	Std
1	1	R93	Chip resistor	680 Ω			603	Std
1	1	R94	Chip resistor	21 k Ω	1%		603	Std
1	1	R95	Chip resistor	24.9 k Ω	1%		603	Std
1	1	R96	Chip resistor	0			603	Std
NM	NM	R101	Chip resistor	NM			603	NM
1	1	R102	Chip resistor	35.6	1%		805	Std
1	1	R103	Chip resistor	510 Ω			603	Std
1	NM	R104	Chip resistor	3.31 k Ω	1%		603	Std
NM	1	R104	Chip resistor	4.75 k Ω	1%		603	Std
2	2	R108,R109	Chip resistor	0.30 Ω	1%		1206	Std low value
1	1	R111	Chip resistor	12.4 k Ω	1%		603	Std
NM	1	R112	Chip resistor	15 k Ω	1%		603	Std
17	17	TP1,TP2,TP4,TP5TP6, TP7,TP9, TP10,TP13,TP14,TP15, TP16,TP17,TP18,TP20, TP21,TP22	Test points	Red				Std
7	7	TP3,TP8,TP11, TP12,TP19,TP23,TP24	Test points	Black				Std
2	2	T1,T2	POE+ Magnetics	ETH1-230LD				Coilcraft
NM	NM	T3	CM choke	NM				NM

Table 1. EVALPM8803-FLY BOM (continued)

3.3 V	5 V	Reference	Description	Value	Tol.	Voltage	Body	Vendor
NM	1	T5	Power transformer	HA3691-AL				Coilcraft
1	NM	T5	Power transformer	JA4173-AL				Coilcraft
NM	NM	T6	Power transformer	(POE300F series)				NM
NM	NM	T7	Power transformer	(POE13P series)				NM
1	1	T8	Gate driver transformer	DA2319-AL				Coilcraft
1	1	U1	POE+ controller	PM8803			HTSSOP20	STMicroelectronics
3	3	U2,U3,U7	SMT optocoupler	Fairchild FOD817AS			4PDIP	Fairchild
1	1	U4	Shunt regulator	TS431AILT			SOT23-5	STMicroelectronics
NM	NM	U5	Shunt regulator	(TS2431AILT)			SOT23	NM